

TSETER, M.Ya.; BOBOVICH, Ya.S.

Dependence of the line intensity of Raman spectra on the  
frequency of the exciting light. Dokl. AN SSSR no.2:333-336  
S '62. (MIRA 15:9)

1. Predstavleno akademikom A.N. Tereninym.  
(Raman effect)

TOLSTOY, N.A.; KOLOMIYETS, B.T.; GOLIKOVA, O.I.; ~~TSENER, M.Ya.~~

Photoconductivity and luminescence of polycrystalline  $\text{CdS}(\text{Cu})$ .  
Zhur.eksp.i teor.fiz. 30 no.3:575-576 Mr '56. (MLRA 9:8)  
(Cadmium sulfides) (Photoconductivity) (Luminescence)

TSETER, M.Ya.; BOBOVICH, Ya.S.

Study of polarization spectra in the Raman effect as a  
function of the exciting light frequency. Opt. i spektr.  
12 no.1:54-59 Ja '62. (MIRA 15:2)  
(Raman effect)

*TSENER, M. YA.*

66184

SOV/146-58-5-19/24

~~18(7), 25(1,5)~~ 25.6000

AUTHORS:

Gorodinskiy, G.M., Candidate of Technical Sciences,  
and Tsenter, M.Ya., Aspirant

TITLE:

Optical Method to Control Accuracy of Work on Flat  
Smoothed Metal Surfaces

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy - Priborostroy-  
eniye, 1958, Nr 5, pp 134-140 (USSR)

ABSTRACT:

The purpose of these investigations is development of  
an optical method to control working accuracy on flat  
smoothed surfaces. This study continues an earlier  
investigation of the same authors on the subject of  
reflection qualities of flat, deadened reflecting sur-  
faces, with the light falling in a wide angle. The  
qualities of deadened reflecting surfaces were invest-  
igated by Midlton and Vychetskiy. The author stresses  
the fact, that polished metal surfaces cannot be com-  
pared with mirror surfaces because of their different  
microtopography. The different methods of polishing  
and, resulting from that, the different surfaces are  
discussed. Figure 1 shows the way in which the line

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Optical Method to Control Accuracy of Work on Flat Smoothed Metal Surfaces

are drawn on the raster. Figure 2 shows a photo of the diffraction cards (a - polished surface; b - the pattern in profile). The sample specimen were produced with the exactness rates 7-9. The values in table 1 prove, that in uneven rasters the small squares become larger, if the average height of the microrelief is reduced. Figure 4 gives a diagram of the photometer. It consists of a moveable hinge in form of a parallelogram and of a small magnetic table which serves to fasten the parts. This magnetic table consists of two artificial magnets in shape of two bars, which are fixed to a cylindric support standing on a disc. The construction of this table is explained in figure 5, which shows the whole photometer. The stand and the disc are of iron ARMKO. The accuracy of work on the flat smoothed metal surfaces is tested by comparing the surfaces of the test parts with those of the sample specimen. The integral photometric way of testing the accuracy of work is very exact and is

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Optical Method to Control Accuracy of Work on Flat Smoothed Metal Surfaces SOV/146-58-5-19/24

generally used to control the technological process of flat polishing. There are 2 photographs, 3 graphs, 1 table and 7 references, 6 of which are Soviet and 1 English.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki  
(Leningrad Institute of Fine Mechanics and Optics)

✓

Card 3/3

ACCESSION NR: AP4020925

8/0051/64/016/002/0246/0255

AUTHOR: Tsenter, M.Ya.; Bobovich, Ya.S.

TITLE: Experimental investigation of the relation between Raman spectra and the electronic absorption spectra of some compounds. Frequency dependence of the Raman scattering with excitation outside the absorption band.

SOURCE: Optika i spektroskopiya, v.16, no.2, 1964, 246-255

TOPIC TAGS: Raman spectrum, electronic absorption spectrum, Raman scattering, Raman line intensity, semiclassical scattering theory, carbon tetrachloride, chloroform, benzene, nitromethane, nitrostyrene, nitro compound

ABSTRACT: While the functional dependence of the intensity and degree of polarization of Raman lines on the characteristics of the electronic-vibrational transitions can be described in the framework of quantum-mechanical theory, the usual quantum-mechanical equations are unsuitable for comparisons with experiment. The present work was undertaken to test the validity of the semiclassical theory. The dependence of the Raman line intensity on the frequency of the exciting light was investigated for some liquids transparent in the visible region (carbon tetrachloride,

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ACCESSION NR: APL020925

chloroform, benzene and nitromethane) and for a series of aromatic nitro compounds (nitrobenzene, para-nitrotoluene, para-nitrophenol, para-nitrophenetole, nitrostyrene, 1,4-bis-( $\beta$ -nitrovinyl)-benzene, para-methoxynitrostyrene, and para-nitroaniline) dissolved in nitromethane. The spectra were excited by a low pressure mercury tube and a specially developed helium discharge tube, yielding lines in the 4047 to 5875 Å range. The Raman spectra were recorded photoelectrically by means of a DFS-12 spectrograph; the absorption spectra were recorded by means of an SF-4 spectrophotometer. Some of the line intensity curves are reproduced in figures. It is shown that the observed frequency dependence of the Raman line intensity for different vibrations is satisfactorily described by the semiclassical theory (close to the bands, taking damping into account). Comparison shows that the frequency of the actual transition involved in the scattering, found for the investigated nitro compounds on the basis of the experimental data, is in qualitative agreement with the frequency of the purely electronic transition in the corresponding molecule. Thus, the results indicate that the characteristics of Raman scattering by molecules with continuous electronic absorption spectra is satisfactorily described by the semiclassical theory with excitation both far from and near to the long wavelength absorption band. "The authors are grateful to B.S. Neporent and N.G. Bakhshiyev for discussion of the results of the work." Orig.art.has: 2 formulas, 4 figures and 2 tables.

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68310

SOV/51-8-1-8/40

24.6100

AUTHORS: Bobovich, Ya.S. and Teenter, M.Ya.

TITLE: On the Polarization Ratios in the Raman Spectra<sup>21</sup> of Molecules with Strong Conjugation

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 46-50 (USSR)

ABSTRACT: The authors investigated the effect of conjugation on polarization of the Raman lines of 26 aromatic compounds. All measurements were made photoelectrically using apparatus described earlier (Refs 6, 8, 9). An industrial version of DFS-12 was employed. The spectra were excited with the blue line of mercury at 4358 Å. The degrees of depolarization,  $\rho$ , of various lines of the 26 compounds are given in Table 1. This table shows that in the majority of compounds the value of  $\rho$  is close to 0.5. This happens in characteristic vibrations of individual bonds such as NO, C=C, C≡C, C≡N, in fully symmetric and antisymmetric vibrations of the NO<sub>2</sub> group, and in complex vibrations of the benzene, naphthalene, furan and thiofuran rings. The observed effect is due to strong conjugation in a direction along which the polarizability  $\alpha$  has the greatest value (mainly due to de-localized  $\pi$ -electrons). Then

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68310

SOV/51-8-1-8/40

On the Polarization Ratios in the Raman Spectra of Molecules with Strong Conjugation

for any vibration the ellipsoid  $\partial\alpha/\partial q$  (where  $q$  is a normal vibrational coordinate) is strongly elongated in the direction of maximum  $\alpha$ . Theory shows that in such a case the degree of depolarization of Raman lines should be very close to 0.5. There are 2 tables and 10 references, 9 of which are Soviet and 1 translation into Russian.

SUBMITTED: June 4, 1959

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33638

S/051/62/012/001/006/020  
E075/E436

5.5310 1273, 1282 1153

AUTHORS: Tsenter, M.Ya., Bobovich, Ya.S.

TITLE: Investigation of the polarization spectra of combined diffusion in relation to the frequency of excitation light

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 54-59

TEXT: The authors investigated the relation between the degree of depolarization  $\rho$  and the frequency of excitation light for the following 14 compounds

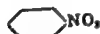
I\*

CH3NO2

II\*



III\*\*



IV



V



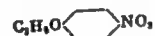
VI



VII\*\*\*



VIII



IX



X



XI



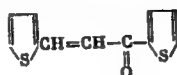
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33638

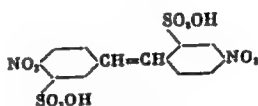
S/051/62/012/001/006/G20  
E075/E436

Investigation of the polarization ...

XII



XIII



XIV



All spectra were excited with the light of blue and green mercury lines (4358 and 5461 Å respectively) and were registered photoelectrically with the aid of apparatus ДФС-12 (DFS-12). Measurements were made of the degree of depolarization of the lines of the fully symmetrical vibration of nitrogroup and double bond C=C, antisymmetrical vibration of benzene ring and two unidentified vibrations of thiophene ring. Acetone served as a solvent for compounds (II) and (IV) to (XII), benzene for compound (I), dichloroethane for (XIV) and water for (XIII). Absorption spectra of some of the compounds were determined by using spectrophotometer СФ-4 (SF-4). Isolation of the polarized

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S/051/62/012/001/006/020

Investigation of the polarization ... E075/E436

components of the lines was carried out by the method of D.H.Rank and R.E.Kagarise (Ref.5: J. Opt. Soc. Amer., v.40, 1950, 89). Errors in the determinations of  $\rho$  did not exceed 0.02 to 0.03. For the nitro-group in nitromethane (I),  $\rho$  was calculated using M.V.Vol'kenshteyn's equation (Ref.9: Vibrations of molecules, v.2. GTTI, M.-L., 1949)

$$\rho = \frac{6\rho_N}{6 - \frac{N-1}{2N} \cdot 3 \sin^2 \varphi (6 - 7\rho_N)} \quad (1)$$

where  $\rho$  - degree of depolarization of individual bond;  
 $\rho_N$  - measured depolarization of the vibrations of equivalent bonds;  
 N - number of such bonds and  $\varphi$  - angle between the bonds.  
 For  $\varphi = 125^\circ$ ,  $\rho$  is near to 0.5. It is thought that the fully symmetrical vibration of nitro-group is caused in different degrees by two transitions: one polarized along the axis of the molecule and the other perpendicular to the axis. For nitrobenzene (III),  $\rho$  is lowered and grows steadily with increasing conjugation reaching the value of 0.5. It was shown that  $\rho$  does not depend

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S/051/62/012/001/006/020

E075/E436

Investigation of the polarization ...

on the frequency of excitation light. Eq.(1) probably does not apply to nitrobenzene and the other more conjugated compounds, for which application of the equation gives values of  $\rho$  much greater than 0.5. The authors conclude that for all the compounds investigated there exists only one longwave polarized transition. It is thought possible that for the vibrations studied several electronic transitions took place, all equally polarized. There are 1 table and 16 references: 11 Soviet-bloc and 5 non-Soviet-bloc. The references to English language publications read as follows: Ref.3: N.S.Bayliss, E.G.McRae. J. Phys. Chem., v.58, 1954, 1002; Ref.5: D.H.Rank, R.E.Kagarise. J. Opt. Soc. Amer., v.40, 1950, 89; Ref.10: D.G.Rea. J. Molec. Spectrosc., v.4, 1960, 499.

SUBMITTED: January 9, 1961

Card 4/4

2 4,350' (4205)

40563

S/020/62/146/002/004/013  
B104/B108

AUTHORS: Tsenter, M. Ya., Bobovich, Ya. S.

TITLE: The dependence of the Raman line intensity on the frequency of the exciting light

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 2, 1962, 333 - 336

TEXT: The frequency response of the Raman line intensity over a wide range of frequencies of the exciting light was studied for nitromethane (internal reference signal) and nitromethane solutions of carbon tetrachloride, chloroform, and benzene. The concentrations of the solutions were chosen so that the line intensities of solvent and solute were commensurable. The reference lines of nitromethane ranged from 1376 to 1401  $\text{cm}^{-1}$ . The 4047-, 4358-, and 5461- $\text{\AA}$  lines of Hg and the 4471-, 5016-, and 5875- $\text{\AA}$  lines of He were used for excitation. Fig. 1 shows that the intensities

can be described by  $((\nu - \nu_{\text{vib}})/\nu)^2$ , where  $\nu_{\text{vib}}$  is the vibrational transition frequency. This result is in good agreement with published data. The position of the electron vibrational transition can be

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The dependence of the Raman...

S/020/62/146/002/004/013  
B104/B108

determined by choosing that value of  $\nu_e$  at which the frequency dependence agrees best with experimental data (Fig. 2).  $\nu_e$  is the frequency of a Frank-Condon electron vibrational transition. Such semiempirical calculation shows that the same long-wave transition is essential for all the vibrations considered. There are 3 figures. ✓

PRESENTED: April 3, 1962, by A. N. Terenin, Academician

SUBMITTED: March 28, 1962

Fig. 1. Frequency response of line intensities.

Legend: (a) carbon tetrachloride, 459  $\text{cm}^{-1}$ ; (b) benzene, 992  $\text{cm}^{-1}$ ; (c) nitromethane, 1376 - 1401  $\text{cm}^{-1}$ . (1) experimental data; (2)

$I \sim \left( \frac{\nu - \nu_{\text{vib}}}{\nu} \right)^2 (\nu_e^2 - \nu^2)^2 / (\nu_e^2 - \nu^2)^4$ ; (3)  $I \sim (\nu - \nu_{\text{vib}})^4 (\nu_e^2 + \nu^2)^2 / (\nu_e^2 - \nu^2)^4$ .

Fig. 2. Frequency response of the line intensity of symmetric vibrations of the nitrogroups in nitromethane solutions.

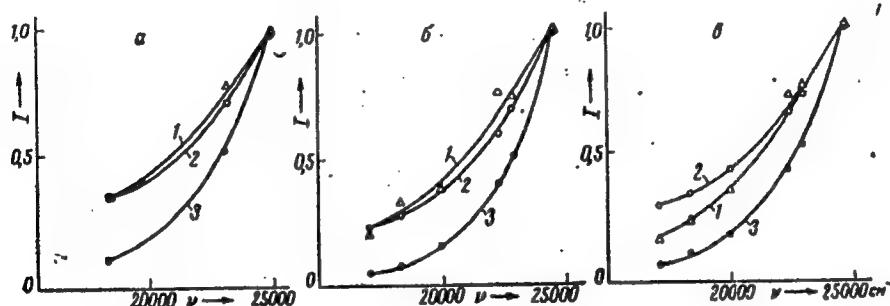
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The dependence of the Raman...

5/020/62/146/002/004/013  
B104/B108

Legend: (1) nitrobenzene; (2) paranitrotoluene; (3) paranitrophenol; (4) paranitrophenetol; (5) nitrostyrene; (6) 1,4-bi-( $\beta$ -nitrovinyl)-benzene; (7) parametoxynitrostyrene; (8) paranitroaniline. Arrows indicate semi-empirical electron vibrational transitions.

Fig. 1



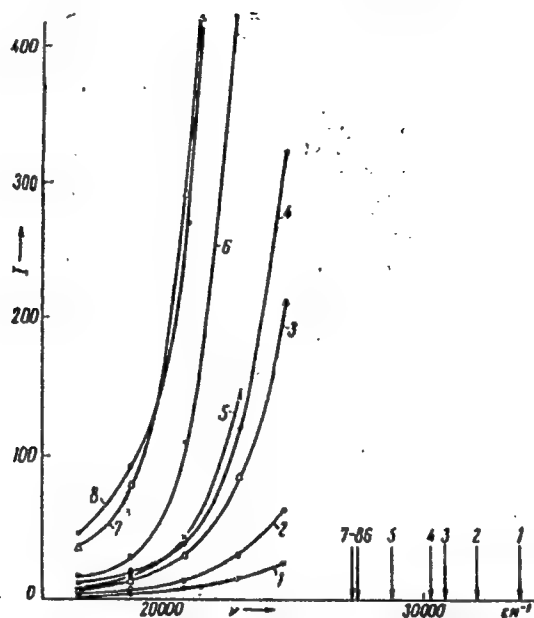
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The dependence of the Raman...

S/020/62/146/002/004/013  
B104/B108

Fig. 2

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ACC NR: AF7004144

SOURCE CODE: UR/0051/67/022/001/0159/0160

AUTHOR: Bortkevich, A. V.; Sokolova, O. G.; Tsenter, M. Ya.; Bobovich, Ya. S.

ORG: none

TITLE: Influence of solvents on the generation threshold of the  $992\text{ cm}^{-1}$  line in the stimulated Raman scattering of benzene

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 159-160

TOPIC TAGS: ~~excited~~ Raman scattering, stimulated emission, benzene, laser application, organic solvent, *Raman spectrum, ruby laser, optic film/KS-19 optic film*

ABSTRACT: To eliminate the effects of the reaction of the investigated radiation on the operation of the master generator, the authors have investigated the generation thresholds of the  $992\text{ cm}^{-1}$  of the stimulated emission of benzene in different binary mixtures inside the resonator under the assumption that this reaction can be neglected at low conversion coefficients of the scattered radiation. The spectra were excited with a Q-switched ruby laser having a power of approximately 5 MW and a pulse duration of 75 nsec. The optical shutter was a filter of KS-19 glass. The spectra were recorded photographically with a diffraction grating. The chosen measure of the generation threshold of the  $992\text{ cm}^{-1}$  line was the effective thickness of the benzene layer in the tested solution at fixed laser operation mode and fixed cell length. This thickness was 15 mm for pure benzene, increasing to 25 mm for benzene dissolved in toluol and carbon tetrachloride, to 30 mm for solutions in hexane, cyclohexane,

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UDC: 535.375 + 532.73.0

ACC NR: AF7004144

chloroform, acetone, and nitromethane, and to 35 mm for doddecane, bromoform, and methylcyclohexanon. The results are interpreted as meaning that in all solvents the generation threshold is nearly double compared with pure benzene, and that the threshold is approximately the same (within  $\pm 15\%$ ) for almost all solvents. No explicit connection could be discerned between the observed quantities and the intermolecular interaction. The difference between the pure benzene and its solutions may be due to the interaction between modes or to resonant parametric interaction. Additional experiments are necessary for a full clarification. Orig. art. has: 1 table.

SUB CODE: 20/ SUBM DATE: 22Jul65/ ORIG REF: 003/ OTH REF: 005 [WA-14] [02]

Card 2/2

~~TSINTER, S.M.~~

Semiautomatic machine for shaping plates. Trudy GIKI no.1:3-9 '56.  
(lottery) (MIRA 11:5)  
(Ceramic industries--Equipment and supplies)

TSETER, S.M.

Semiautomatic device for polishing porcelain articles. Stek.  
1 ker. 18 no.12:19-22 D '61. (MIRA 16:8)

(Porcelain) (Polishing wheels)

L 7998-66 EWT(m)/EPA(a)-2/EPE(n)-2/EWP(t)/EWP(b) Jp(c) JD/VW/JG

ACC NR: AP5026531

SOURCE CODE: UR/0286/65/000/019/0071/0071

AUTHORS: Zuyev, N. M.; Tsenter, Ya. A.; Vaynshteyn, G. M.; Vlasov, V. A.; Ustinov, V. S.; Kiselev, O. G.; Maslennikov, I. P.; Feofanov, L. P.; Sharunova, G. M.; Vukolev, V. V.; Ivanov, A. B.

ORG: none

TITLE: A mixer furnace for remelting the condensate from titanium production. Class 40, No. 175229 /announced by All-Union Scientific Research and Design Institute of Aluminum, Magnesium, and Electrode Industry and by Dnieper Titano-Magnesium Plant, (Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut alyuminiyevoy, magniyevoy i elektrodnoy promyshlennosti i Dneprovskiy titano-magniyevyy zavod)/

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 71

TOPIC TAGS: physical metallurgy, metallurgic furnace, metallurgic industry, titanium

ABSTRACT: This Author Certificate introduces a mixer furnace for remelting the condensate from titanium production. The furnace consists of a melting chamber connected by a duct in its lower part to a mixer forehearth, and of electrodes for melting an inert salt (see Fig. 1). To simplify the process and to reduce the losses of magnesium and magnesium chloride, the mixer is provided with a suspended metallic cap for collecting liquid magnesium and for protecting it from reacting with gases and the lining. A liquid seal secures excess pressure of inert gas (argon) over the melt

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UDC: 669.721.411:621.745.35

L 7998-66

ACC NR: AP5026531

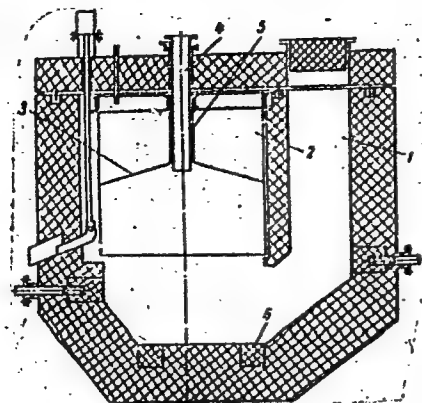


Fig. 1. 1- melting chamber; 2- mixer forehearth; 3- suspended metallic cap; 4- pipe for drawing off magnesium; 5- liquid seal; 6- auxiliary electrodes

during discharging of the charge and removing the molten products. The bottom of the bath is provided with auxiliary electrodes for preventing the formation of crust. Orig. art. has: 1 figure.

SUB CODE: IE/ SUBM DATE: 16Mar64

nw

Card 2/2

STRELETS, Kh.L.; TAYTS, A.Yu.; GULYANITSKIY, B.S.; PAZUKHIN, V.A., prof.,  
doktor tekhn.nauk, retsenzent; KHEYFITS, Ya.M., kand.khim.nauk,  
retsenzent; VERIGIN, V.N., kand.tekhn.nauk, retsenzent; FISHER,  
A.Ya., kand.tekhn.nauk; retsenzent; TSENTER, Ya.A., kand.tekhn.  
nauk, retsenzent; MARKOV, G.S., inzh., retsenzent; KRIVORUCHENKO,  
V.V., inzh., retsenzent; CHERNOBROV, S.M., red.; ARKHANGEL'SKAYA,  
M.S., red.izd-va; KLEYMAN, M.R., tekhn.red.

[Magnesium metallurgy] Metallurgiya magniia. Izd.2., perer. i  
dop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi  
metallurgii, 1960. 479 p. (MIRA 13:5)

(Magnesium--Metallurgy)

S/136/60/000/04/013/025  
E091/E235

AUTHORS: Tsenter, Ya. A., Gvozdev, S. G., Orobey, N. Ya.,  
Myshkina, A. D., Andreyev, A. Ye., and Mal'shin, V. M.

TITLE: Improving the Grade of Commercial Primary Magnesium and  
Magnesium Alloys ✓

PERIODICAL: Tsvetnyye metally, 1960, Nr 4, pp 51-56 (USSR)

ABSTRACT: The results are described of laboratory and production tests aimed at producing a commercial metal which satisfies the exacting requirements with respect to flux inclusions. The following operations were carried out: a) testing of various chloride and chloride-free fluxes under melting and pouring conditions of magnesium and its alloys; b) introduction of conveyor teeming of ingot moulds in place of hand teeming; c) complete revision of the melting and teeming procedure for primary magnesium and the magnesium alloys MGS1 and MGS5. ✓ Experimental melting of magnesium and MGS5 alloys with various fluxes were carried out under laboratory conditions (see Table, p 52). All fluxes were applied as cover layers, except for the VIZ flux, which was applied the same way as a refining flux. The starting metal for the experimental melting was standard magnesium produced by the Berezniki Magnesium ✓

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S/136/60/000/04/013/025  
EO91/E235

Improving the Grade of Commercial Primary Magnesium and Magnesium Alloys

Works (BMZ) and an MGS5 alloy manufactured by the Solikansk Magnesium Works (SMZ). In the case of some melts, 3% electrolyte was added to the molten metal in order to bring up the chloride content of the metal to that of the crude magnesium. In a few melts, solid crude magnesium, made at the VAMI experimental establishment, was used. Melting of 8.5 to 9 kg of metal was carried out in an iron crucible in an electric resistance furnace, using magnesium or MGS5 alloy ingots as the initial charge. The metal was melted under a layer of flux and heated to the teeming temperature. When solid crude magnesium, and MGS5 alloy made from it, were used, the metal was melted under a layer of flux and heated to 710 to 720°C. The melt was refined at this temperature with VIZ flux and then cooled to the teeming temperature. In some melts, the metal was reheated to 800°C after refining and allowed to stand until its temperature had dropped to that at which teeming could be carried out. In all cases the teeming temperature of magnesium was 690 to 700°C and ✓

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S/136/60/000/04/013/025  
EO91/E235

Improving the Grade of Commercial Primary Magnesium and Magnesium Alloys


that of the MGS5 alloy, 680 to 690°C. The metal was poured directly from the tilting crucible into horizontal ingot moulds. From each melt, 3 ingots were teemed, each weighing 2.5 to 3 kg. During teeming, the jet and the metal in the moulds were protected by sulphur powder. A comparative estimate was carried out on the basis of the ability of a flux to protect the metal from burning, on its ability to form a plastic crust at the end of the melt, on the ability to separate from the metal on teeming, etc. Three melts were made with each flux. On the basis of observations carried out during melting, the following can be said; a) all established chloride fluxes protect the metal satisfactorily against burning; b) the chloride-free fluxes VAMI-1 and VAMI-5 and borate flux barely protect the metal from burning and can be applied as cover fluxes only for a relatively short period; c) addition of boric acid to VIZ flux prior to teeming leads to the formation of a stronger and more tenacious flux crust to form and enables it to separate more easily from the metal. This lessens the possibility of flux

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S/136/60/000/04/013/025  
E091/E235

Improving the Grade of Commercial Primary Magnesium and Magnesium Alloys

entering the metal. The quality of the metal was estimated according to its chloride content and by results of inspections of fractures and cuttings of ingots, i.e. by standard control methods. To expose flux inclusions, specimens were tested in a steam-air chamber. On the basis of laboratory and industrial test results, changes were incorporated in the technological procedure in the manufacture of commercial magnesium and the magnesium alloys MGS-1 and MGS-5. The work described in this paper was carried out by VAMI the Berezniki Branch of VAMI jointly with the Berezniki and the Solikamsk Magnesium Works. There are 1 table and 3 references, 2 of which are Soviet and 1 English.



Card 4/4

SOV/137-58-9-18742

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 85 (USSR)

AUTHORS: Belyayev, A.P., Gokhshteyn, M.B., Tsenter, Ya.A.

TITLE: Improvements in the Procedure for Cleaning Raw Aluminum and for Processing it to Commercial Semimanufactures at Aluminum Plants (Usovershenstvovaniye tekhnologii ochistki alyuminiya-syrtsa i pererabotki yego na tovarnyye polufabrikaty na alyuminiyevykh zavodakh)

PERIODICAL: V sb.: Legkiye metally. Nr 4, Leningrad, 1957, pp 61-65

ABSTRACT: A review is presented of measures carried out in the USSR and introduced into production to improve the procedures for cleaning raw Al and for casting it into ingots. It is noted that raw Al is now cleaned by chlorination in the ladle for 10-15 minutes, ~0.5 kg  $Cl_2$ /t Al being used, followed by settling for up to 1.5 hour in ladles or mixers. Semicontinuous casting of Al has been introduced. Ideas are presented on the further improvement of raw Al refining and casting procedures and on the advisability of organizing the production of Al alloys at new aluminum plants. 1. Aluminum--Processing 2. Aluminum--Casting 3. Aluminum--Chlorination

Ye.Z.

Card 1/1

TSETER, Ya.A.; PANINA, L.A.; LANDIKHOV, A.D.

Secondary magnesium alloy for automobile castings. Lit. proizv.  
no.12:5-6 D '64. (MIRA 18:3)

SOV/137-58-9-18761

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 87 (USSR)

AUTHOR: Tsenter, Ya.A.

TITLE: Improvement in the Process and Mechanization of the Production of Refined Magnesium and Alloys Thereof (Uovershenstvovaniye tekhnologii i mekhanizatsiya proizvodstva rafinirovannogo magniya i yego splavov)

PERIODICAL: V sb.: Legkiye metally. Nr 4. Leningrad, 1957, pp 93-95

ABSTRACT: In recent years the following improvements have been made in the production of refined Mg in the USSR: Removal of the metal from the bath by a vacuum ladle; use of liquid raw metal in alloy manufacture and in foundry departments thanks to the improvement in the quality of electrolytic Mg; increase in the quality of electrolytic Mg; increase in the capacity of electric furnaces for remelting Mg and alloy making from 0.5 to 1 t; mechanization of the pouring of commercial Mg and its alloys; and introduction of a system of transfer of the metal by pump has been introduced. To provide shielded treatment of the pigs, pickling in  $\text{HNO}_3$  has been replaced by washing in hot  $\text{Na}_2\text{CO}_3$  solution. The process is mechanized. The impurities content of commercial Mg has been considerably reduced. Ye.Z.

Card 1/1

1. Magnesium--Production 2. Magnesium alloys--Production 3. Foundries  
--Equipment 4. Foundries--Automation

137-58-6-11948

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 109 (USSR)

AUTHOR: Tsenter, Ya.A.

TITLE: Possibilities for Progress in the Procedure for Treating  
Liquid Crude Magnesium (Vozmozhnosti usovershenstvovaniya  
tekhnologii pererabotki zhidkogo magniya-syrtsa)

PERIODICAL: Tr. Vses. alumin.-magn. in-ta, 1957, Nr 39, pp 505-510

ABSTRACT: Contaminants are introduced to crude Mg during its extrac-  
tion from the bath, particularly in hand teeming into molds  
with the sprinkling of ground electrolyte to prevent combustion.  
This statement is readily confirmed by analyses of specimens  
of raw Mg taken directly from electrolysis baths. Bath samples  
were usually dipped out by spoon and cast into molds (into pigs  
weighing 2.5-2.8 kg). Unlike the standard procedure, no elec-  
trolyte was used to prevent combustion of the metal. Instead,  
it was sprinkled with ground sulfur as is done in foundries. The  
results of analysis shows that the crude material from the baths  
completely satisfied the purity requirements of (USSR Standard)  
GOST 904-49 for MG-1 and MG-2 magnesium. Examination of  
pig fractures with the naked eye and with the binocular

Card 1/2

137-58-6-11948

Possibilities for Progress in (cont.)

microscope (magnified up to 25 times) revealed no difference in purity between pigs of crude and of refined Mg. A separating bath has been placed in operation at one of the magnesium plants. This was first used to remelt solid Mg crude. As the heats were run, a series of specimens was taken from the bath and from the flow when the metal was poured. The results of analysis of the specimens showed that, in impurities content, the metal in the bath fully satisfies the standards for primary Mg. Thus, it is deemed possible to produce commercial Mg of standard quality without refining, reheating, and settling.

I.G.

1. Magnesium--Processing
2. Magnesium--Impurities
3. Magnesium--Production

Card 2/2

VAYNSHTEYN, German Mendelevich; LOKSHIN, Efroim Pinchusovich; TSENER,  
Yakov Al'terovich; GULYANITSKIY, B.S., red.; KAMAYEVA, O.M.,  
red. izd-va; OBUKHOVSKAYA, G.P., tekhn.-red.

[Improving the procedure of melting and casting primary  
magnesium and magnesium alloys] Usovershenstvovanie tekhnologii  
plavki i lit'ia pervichnogo magniia i magnievykh splavov. Mo-  
skva, Metallurgizdat, 1962. 34 p. (MIRA 16:3)  
(Magnesium--Metallurgy)



*Tsentev, m ya.*

USSR / Optics

K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10385

Author : Tolstoy, N.A., Kolomiyets, B.T., Golikova, O.I., Tsentev, M.Ya.  
Inst : Not Given  
Title : Photoconduction and Luminescence of Polycrystalline CdS(Cu).

Orig Pub: Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 575-576

Abstract: An investigation of polycrystalline specimens of CdS-Cu ( $10^{-6}$  -  $5 \times 10^{-4}$  g/g). In specimens with small concentration of copper, the stationary photoconductivity  $\Delta \sigma_0$  increases with the intensity of the exciting light A (mercury lines 365, 546, and 578 millimicrons) at a slower rate than E, and has a tendency to saturation (sublinear dependence). At high concentration of copper,  $\Delta \sigma$  increases more rapidly than E (superlinear dependence). Specimens with average concentrations (approximately  $10^{-4}$  g/g) keep a dependence of  $\Delta \sigma_0$  (E), close to linear. Upon transition from the low concentration to the high concentration the dark conduction di-

Card : 1/3

USSR / Optics

K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10385

minishes rapidly. All specimens which luminesce intensely in the red and infrared regions of the spectrum. In low-concentration specimens the brightness of the stationary glow  $I_0$  is proportional to  $E$ . In high concentration specimens  $I_0(E)$  is superlinear. For low concentration specimens the ratio of the integral curves of rise and fall of the photoconductivity  $L_r/L_f < 1$ , and the ratio of the velocity of rise in photoconductivity during the incidence when the light is turned on to the ratio of the fall during the incidence when it is turned off,  $\Delta\sigma'_{or}/\Delta\sigma'_{of} > 1$ . High-concentration specimens give  $L_r/L_f \gg 1$ , and  $\Delta\sigma'_{or}/\Delta\sigma'_{of} \ll 1$ .

In this case the initial course of the curve has a hyperbolic character  $\Delta\sigma_0 \sim t^2$ . For low concentration the flare-up and extinction of glow curves have  $L_{f1}/L_{ext} \leq 1$  and  $I'_{of1}/I'_{oext} > 1$  and are typical for the kinetics of the glow of hyperbolic

Card : 2/3

USSR / Optics

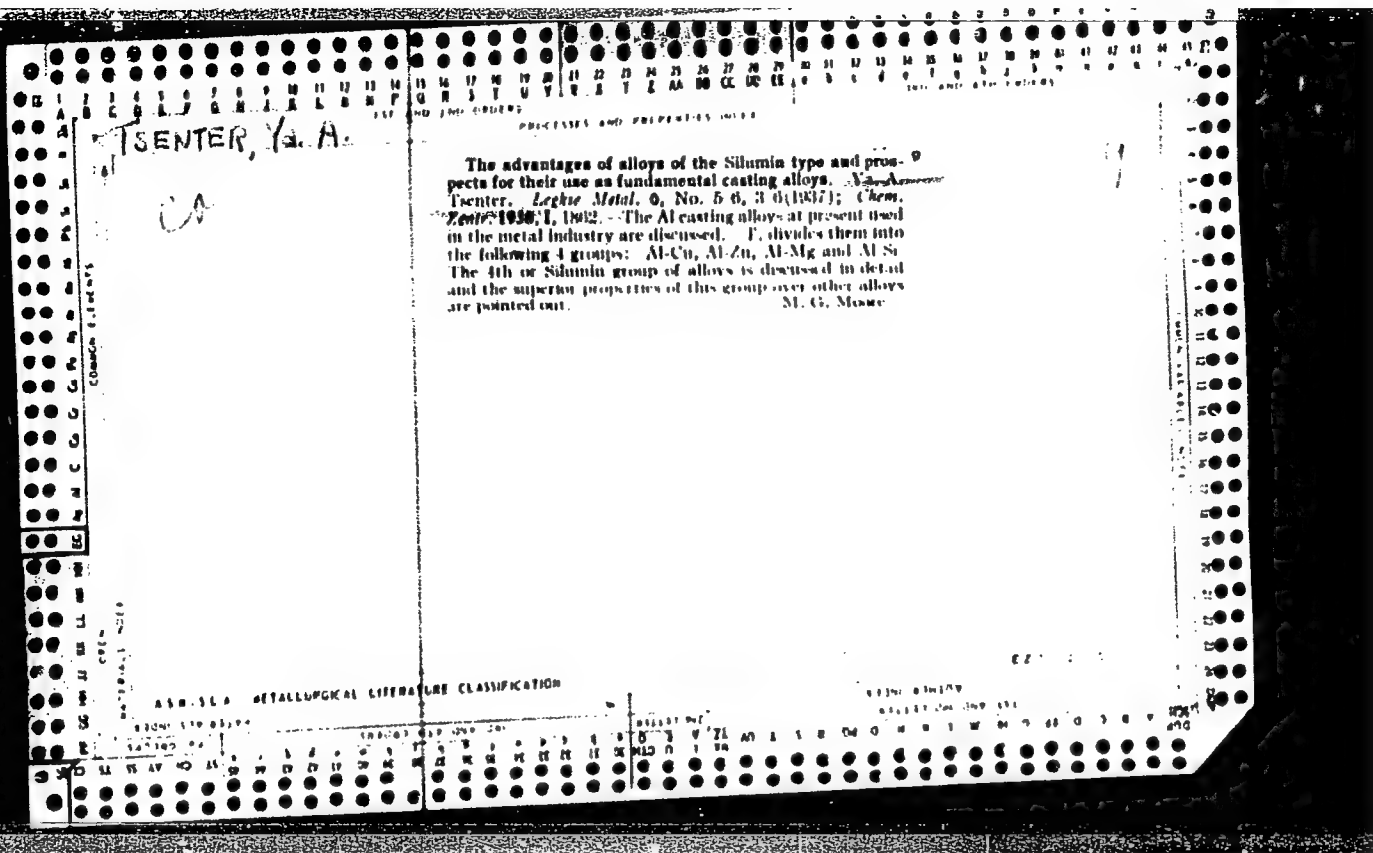
K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10385

phosphors in the absence of extinction. For high concentration  $L_{f1}/L_{ext} \gg 1$  and  $I_{Of1}/I_{Oa} \ll 1$ . Such relaxation characteristics are typical for concentration-extinguished or temperature-extinguished phosphors of the hyperbolic type. The concentration extinction of photoconductivity corresponds to a concentration extinction of luminescence. The authors conclude that the laws obtained contradict any recombination glow scheme and are in agreement with the theory of the two-step mechanism of excitation (Loshkarov, V. Ye., Fedorus, G.A., Izv. AN SSSR, ser. fiz., 1952, 16, 81; Referat Zhur Fizika, 1956, 29808.

Card : 3/3

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
<p>ENTER, V. A.</p> <p>PROCESS AND PROPERTIES INDEX</p> <p>9</p> <p>Magnesium alloys containing manganese. V. O. Gagen-Torn and V. A. Lashin. <i>Metallurg</i> 11, No. 7, 85-91 (1936). -- Mech. properties of Mg alloys contg. 0.83, 1.70% Mn can be improved by adding Al 0-4.22, Zn 0-2.82, and Cd 0-0.54%. Corrosion resistance of these alloys can be increased by heat treatment. H. W. R.</p> <p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>COMMON ELEMENTS</p> <p>OPEN</p> <p>VERTICAL INDEX</p>										<p>COMMON VARIANTS INDEX</p>									



TSENTER, Y. A.

Chill casting of pistons from a special Silumin. Ya. A. Tsentser. *Legkie Metal.* 6, No. 5-6, 12-17 (1937); *Chem. Zentr.* 1938, I, 1862. — The Silumin used for piston castings had the compn.: Si 12.3, Ni 2.57, Cu 0.89, Mg 1.0 and Fe 0.34%. Its properties were compared with those of 2 alloys, one of which contained Cu 10, Fe 1.2, Mg 0.2% and the remainder Al, the other Cu 4, Ni 3, Mg 1.5 and the remainder Al. Casting of the pistons from these last 2 alloys resulted in a great deal of waste as a result of their great sensitivity to variations in the temp. of the molds. A study of the optimum conditions of heat-treatment to ensure castings with good mech. properties indicated the following: casting temp. 670-720°, temp. of the molds 200-50°, heating 6 hrs. at 525°, hardening in cold water and subsequent artificial aging at 150° for 18-24 hrs. The following consts. are reported: extension 0.6-0.8%, Brinell hardness 130-9 kg./sq. mm., a low coeff. of thermal expansion and high resistance to wear. M. G. Moore

AS 6.5 LA METALLURGICAL LITERATURE CLASSIFICATION

441131 27

441131 27



PROCESSING AND PROPERTIES INDEX																									
*Aluminum Casting Alloys. Ya. A. Tsenter (Frieda Tsenter). <i>Alum. Magn. Ind.</i> 1939, 10, 149-170. - [In Russian.] Data concerning the classification and properties of aluminum casting alloys are presented, and a comparative study was made of the casting, mechanical, and corrosion-resisting properties of the principal alloys. The microstructures of alloys belonging to the systems aluminum-zinc, aluminum-copper, aluminum-silicon, and aluminum-magnesium, were studied. N. A.																									
ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION																									

TSENTER, Y.A.

16

THE TECHNOLOGY OF THE PRODUCTION OF MAGNESIUM ALLOYS IN GERMANY.  
YA. A. TSENTER (TSVET. METALLY, 1948, (4), 55-62) (In russian) A review

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

TSENTEROVA, L.G.

USSR/Man and Animal Physiology- The Effect of Physical Factors.    7  
Ionizing Radiation.

Abstr Jour : Ref Zhur Biol., No 3, 1959, 13377  
Author : Dragichina, N.A., Ryanko, N.K., Gel'fon, I.A., Ivanov,  
T.B., Osipova, V.G., Stepanova, V.I., Ryukova, M.V.,  
Solov'yeva, Ye.A., Tsentserova, L.G.  
Inst : -  
Title : Clinical Aspects of the First Stages of the Chronic  
Effects of Ionizing Radiation on the Organism  
Orig Pub : Gigiyena trudai prof. sabolevnanly, 1958, No 2, 3-8  
Abstract : No abstract.

Card 1/1

TSENTILO, D.I., kand.med.nauk

Treating congenital cleft palate. Vrach.delo no.4:429 Ap '58  
(MIRA 11:6)

1. Kafedra khirurgicheskoy stomatologii (zav. - prof. N.V.  
Fetisov) Kiyevskogo meditsinskogo instituta.  
(PALATE, CLEFT)

*Tsentilo, D.I.*  
TSENTILO, D.I. . .

Incomplete tooth extraction and complications. Vrach.delo no.10:  
1077 0 '57. (MIRA 10:12)

1. Kafedra patologicheskoy anatomii (zav. - prof. I.M.Paysakhovich)  
Kiyevskogo meditsinskogo stomatologicheskogo instituta.  
(~~TEETH~~--EXTRACTION)

INVENTOR, W.

BALABANOV, M.; SAKHATCHIEV, A.; ~~TSENTNER, I.~~

Apparatus for bucco-facial fixation in curietherapy. Khirurgiia,  
Sofia 10 no.1:83-85 1957.

1. (Iz Nauchnoizsledovatel'skii onkologichen institut i  
Nauchnoizsledovatel'skii stomatologichen institut.)

(FACE, neoplasms,  
radium ther., fixation appar (Bul))

(MOUTH, neoplasms,  
same)

(RADIUM, therapeutic use,  
cancer of face & mouth, fixation appar (Bul))

Tsenter, E.M.

48-7-17/21

AUTHORS: Serdyukova, I.A., Khabakhpashev, A.G., Tsenter, E.M.

TITLE: The Investigation of the  $(\alpha, n)$  - Reaction on Oxygen  
(Issledovaniye  $(\alpha, n)$  - reaktsii na kislороde)

PERIODICAL: Izvestiya Akad. Nauk SSSR, Ser. Fiz., 1957, Vol. 21, Nr 7,  
pp. 1017 - 1019 (USSR)

ABSTRACT: Natural oxygen consists of 3 isotopes:  $O^{16}$ ,  $O^{17}$  and  $O^{18}$ . The reaction  $(\alpha, n)$  on these isotopes has the following energy effect: on  $O^{16}$  - 12 MeV; on  $O^{17}$  + 0,52 MeV; on  $O^{18}$  - 0,7 MeV. In this manner the  $(\alpha, n)$ -reaction for all known  $\alpha$ -emitters can only take place on the isotopes  $O^{17}$  and  $O^{18}$ . The emission of the neutrons upon irradiation with  $\alpha$ -particles of natural oxygen shows that at least one of these isotopes possesses a larger cross section with regard to the  $(\alpha, n)$  - reaction. The authors want to determine which isotope is responsible for the larger emission of the neutrons as well as to determine its cross section and to investigate the  $\gamma$ -radiation which accompanies this reaction. Four standard types of sources representing a solution of polonium in nitric acid with various content of heavy oxygen isotopes (table) were prepared for determin-

Card 1/2

48-7-17/21

The Investigation of the ( $\alpha$ , n) - Reaction on Oxygen

ing the dependence of the neutron current on the concentration of  $O^{18}$ . Figure 1 represents the neutron current as dependent on the concentration of the isotope  $O^{18}$ . The course of calculation of the neutron current is shown on a thick target of pure  $O^{18}$  - isotope. Figure 2 shows three spectra of the  $\gamma$ - radiation, after the process with source 4 had not been taken into account. The  $\gamma$ - radiation which accompanies the ( $\alpha$ , n) -reaction was also investigated. A block scheme of the installation used for this purpose is shown on figure 3 and further explained. The  $\gamma$ - spectrum taken by means of this installation is shown on figure 4 and also explained. It was found that the emission of neutrons from the oxygen target is connected with the isotope  $O^{18}$ . There are 4 figures, 1 table and 4 references, one of which is Slavic.

ASSOCIATION: Moscow Engineering-Physics Institute  
(Moskovskiy inzhenerno-fizicheskĭy institut)

AVAILABLE: Library of Congress

Card 2/2

TSENTER, E. M.

"On K-Ionization in  $\alpha$ -Decay of  $Po^{210}$ ," by V. V. Ovechkin and  
E. M. Tsenter, Atomnaya Energiya, Vol 2, No 3, Mar. 57, pp 282-  
284 ✓

This article concerns discrepancies between data obtained by Migdal (ZhETF 11, 207, 1941), who measured the probability of internal ionization of the K-shell in  $\alpha$ -decay, and data obtained by Levinger (Phys Rev 90, 11 and 207, 1953), who claimed that ionization in the K-shell occurs with a much smaller probability than that found by Migdal.

It is stated that verification of K-ionization has been made difficult because of inadequate knowledge of the conversion coefficient of  $\gamma$ -radiation in the  $\alpha$ -decay of  $Po^{210}$ .

The coefficient of internal conversion of  $\gamma$ -radiation for  $Po^{210}$  was measured and the energy distribution of K-electrons of ionization was determined quantitatively.

"The results obtained agree completely with Migdal's data and conclusively prove the presence of internal K-ionization in the  $\alpha$ -decay of  $Po^{210}$ ." (U)

Sum. 1368

TOLSTOY, N.A.; TKACHUK, N.N.; TSETER, M.Ya.; MANSUROVA, Z.S.;  
BURLAKOV, A.V.

Investigating flash burning in the luminescence of ZnS-Mn  
phosphors. Opt. i spektr. 1 no.5:719-728 S '56. (MLRA 9:11)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta,  
Kafedra fiziki Gosudarstvennyy opticheskii institut imeni  
S.I.Vavilova.

(Phosphors) (Luminescence--Measurement)

TSETER, Ya. A.

Cast Iron

Use of magnesium-ferrosilicon ligature to obtain cast iron with spheroidal graphite.  
Lit. proizv. No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

TSENTA, Ye. L.

TSENTA, Ye. L.: "Investigation of the final machining of machine parts by the superfinish method." Min Higher Education Ukrainian SSR. Khar'kov Polytechnic Inst imeni V. I. Lenin. Khar'kov, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

Source: Knizhnaya letopis' No. 28 1956 Moscow

TSENTHO, D. I.

TSENTHO, D. I.: "Incomplete extraction of teeth, its complications and prophylaxis (clinical and experimental - morphological investigation)." Kiev Order of Labor Red Banner Medical Institute named Academician A. A. Bogomolets. Kiev, 1956. (Dissertations for the Degree of Candidate in Medical Sciences).

SC: Knizhnyy Letopis' No. 22, 1956

TSENTILO, D.I., kand.med.nauk

Preparation of obturators for cleft palates. Stomatologiya 38 no.5:  
55-57 S-O '59. (MIRA 13:3)

1. Iz kafedry khirurgicheskoy stomatologii (zaveduyushchiy - prof.  
N.V. Petisov) Kiyevskogo meditsinskogo instituta (direktor - dotsent  
I.P. Alekseyenko).

(PALATE, CLEFT)

(DENTAL PROSTHESIS)

TSENTILO, D.I. (Kiyev)

Extracting teeth and their roots. Probl. stom. 3:353-357 '56  
(MLRA 10:5)

(TEETH--EXTRACTION)

TSENTILO, P.

A trade-union group organizer and foreman. Sov. profsoiuzy  
17 no.23:28-30 D '61. (MIRA 14:12)

1. Profgruperg Uchastka tsvetnogo lit'ya kiyevskogo zavoda  
"Bol'shevik". (Kiev--Nonferrous metals--Founding)  
(Trade unions)

NIKOLSKIY, G. V., TSENTILOVICH, F. F.

Fishes - Turkmenistan

Fish of the Murgab Basin (Turkmenia), Sbor, trud. Zool. muz., 7, 1951

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified

NIKOL'SKIY, G.V.; TSENTILOVICH, F.F.

Notes on the hydrobiology of the Murgab Basin. Trudy Murg.gidrobiol.  
sta. no.3:40-53 '55. (MLRA 9:8)  
(Murgab Valley--Fresh-water biology)

TSENTILOVICH, K.F.

Growing together of oak roots in cluster and row-hill planting.  
Agrobiologiya no. 1:133-134 Ja-F '61. (MIRA 14:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut rasteniyevodstva,  
seleksii i genetiki.  
(Oak) (Roots (Botany))

TSENTILOVICH, M.A.

TSENTILOVICH, M. A. I YUR'YEV, B. A.

36367 Pervyye itogi poseva duba gnezdovym sposobom v khar'kovskoy oblasti.  
Les 1 Step', 1949, No. 6, S. 81-83

SO: Letopis' Zhurnal' nykh Statey, No. 49, 1949

KORABLEV, Anatoliy Aleksandrovich; TSENTNARSKIY, Igor' Aleksandrovich;  
KOVALEV, Yuriy Sergeyevich; AKUL'SHIN, A.F., inzh.,  
retsenzent; MEL'KUMOV, L.G., inzh., retsenzent; BOGOPOL'SKIY,  
B.Kh., otv. red.; ABRAMOV, V.I., red.izd-va; ZHIVRINA, G.V.,  
tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Handbook for mine electricians servicing automatic control  
devices] Spravochnik elektroslesaria shakhty po obsluzhivaniyu  
avtomaticheskikh ustanovok. Moskva, Gosgortekhnizdat, 1963.  
192 p. (MIRA 17:3)

*TSENTNER, M. Ya.*

B-5

USSR/ Physical Chemistry - Crystals

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11000

Author : Tolstoy N.A., Kolomiyets B.T., Golikova O.I., Tsentner M.Ya.  
 Title : Photoconductivity and Luminescence of Polycrystalline CdS(Cu)

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 575-576

Abstract : In the case of polycrystalline samples of CdS-Cu ( $10^{-6}$  -  $5 \cdot 10^{-4}$  g/g) were investigated: dependence of stationary photoconductivities and luminosity of glow on intensity of exciting light E (Hg-lines 365, 546 and 578 m $\mu$ ), and also the ratios of surface areas below the curves of photoconductivity rise and drop, and below the curves of increase and attenuation of the glow. The conclusion is reached that results are conflicting with any recombination scheme of the glow and are in accord with the theory of a 2-step mechanism of excitation (Loshkarev V.Ye., Fedorus G.A., Izv. AN SSSR, Ser. fiz., 1952, 16 81; RZhKhim, 1956, 54335).

Card 1/1

KOCHEROGIN, S.M.; BARABANOV, V.P.; TSENTOVSKIY, V.M.

Polyelectrolytic behavior of solutions of the copolymers of  
methacrylate and chloroacrylic acid. Izv.vys.ucheb.zav.;  
khim. i khim.tekh. 8 no.2:302-304. '65.

(MIRA 28:8)

.. Kazanskiy khimiko-tekhnologicheskii institut imeni Kirova,  
kafedra fizicheskoy i kolloidnoy khimii.

L 42181-66

ACC NR: AR6014536 EWP(j)/EWT(m)/T

IJP(c)

RM/WW

(A)

SOURCE CODE: UR/0081/65/000/019/S082/S082

AUTHORS: Barabanov, V. P.; Tsentovskiy, V. M.

TITLE: Preparation and physical and chemical properties of copolymer<sup>1</sup> of acrylic acids with methylmethacrylate<sup>2</sup>

56  
B

SOURCE: Ref. zh. Khimiya, Abs. 19S513

REF SOURCE: Tr. Kazan. khim.-tekhnol. in-ta, vyp. 33, 1964, 263-268

TOPIC TAGS: acrylic acid, copolymer, methylmethacrylate, solubility, fluid viscosity, chemical synthesis, electron donor

ABSTRACT: Results obtained in a study of copolymerizing methylmethacrylate with  $\beta$ -nitroacrylic,  $\alpha$ -chloroacrylic,  $\alpha$ -cyano- $\beta$ -phenylacrylic, and  $\beta$ -phenylacrylic acids are reported, as are some of the physical properties of the produced copolymers (CP).  $\alpha$ -Cyano- $\beta$ -phenylacrylic acid was prepared by treating K salt of cyanoacetic acid with freshly distilled benzaldehyde. K salt of cyanoacetic acid was obtained from chloroacetic acid and KCN. The resulting acid was twice recrystallized from methanol, m.p. 178--179C.  $\alpha$ -Chloroacrylic acid was prepared by saponifying  $\alpha$ ,  $\beta$ -dichloropropionate with  $\text{Ba}(\text{OH})_2$  in the presence of  $\text{H}_2\text{SO}_4$ .  $\alpha$ ,  $\beta$ -Dichloropropionate was obtained upon chlorination of crude methylmethacrylate. Prior to use, the acid was twice recrystallized from petroleum ether, m.p.

Card 1/2

L 42181-66

ACC NR: AR6014536

64--65C. Copolymerization was performed in bulk, in the presence of azoisobutyronitrile (initiator) to complete solidification of the resulting product. Copolymerization with chloroacrylic acid was conducted at 40C, and with phenylacrylic, cyanophenylacrylic, and nitroacrylic acids at 75C. Synthesized Cp, independently of the chemical nature of the parent acid and of its amount, all dissolve in ketones, dimethylformamide, ethyl acetate, chloroform, nitroethane, and dioxane. All are insoluble in  $CCl_4$ , saturated hydrocarbons and alcohols. CP, containing 1% of acid with phenyl group or 1% of chloroacrylic acid, dissolve in benzene and in dichloroethane. CP of cyanophenylacrylic and phenylacrylic acids are insoluble in dimethylsulfoxide. Produced CP were freed of the unreacted monomers by re-precipitation from acetone solutions with petroleum ether. Viscosity measurements in ethyl acetate indicate that the solution viscosity threshold value is a function of the character of a given CP. Acids containing an electron-donating phenyl group form CP having a viscosity threshold value twice that of the acids with an electron-accepting group. N. Shamis [Translation of abstract]

SUB CODE: 11, 07/

ms  
Card 2/2

TYABIN, N.V.; TSENTOVEKIY, Ye.M.; VACHAGIN, K.D.

Flow of a non-Newtonian liquid in a short plate channel.  
Izv.vys.ucheb.zav.; khim.i khim.tekh. 8 no.4:580-584 '65.  
(MIRA 18:11)

1. Volgogradskiy politekhnicheskii institut i Kazanskiy  
khimiko-tekhnologicheskii institut imeni Kirova.

TSENTSEVITSKAYA, Ye.S.

Designing beams with a minimum weight. Trudy KAI no.62:45-57 '61.  
(MIRA 17:2)

TSENTSIFER, A. B.

Dissertation: "A Study of the Electrocracking of Hydrocarbons Up to Acetylene." Cand  
Chem Sci, Moscow Order of Lenin State U imeni M. V. Lomonosov, 18 Jun 54. (Vechernyaya  
Moskva, Moscow, 9 Jun 54)

SO: SUM 318, 23 Dec 1954

TSENTSIPER, A.B.; YEREMIN, Ye.N., KOPCHENOV, N.I. (Moscow,

Conversion of hydrocarbons to acetylene in the electric discharge in a static system. Part 1. Zhur. fiz. khim. 37 no.4: 835-841 Ap '63. (MIRA 17:7)

1. Moskovskiy gosudarstvennyy universitet.

L 47554-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/RO

ACC NR: AP6032907

SOURCE CODE: UR/0062/66/000/009/1665/1665

AUTHOR: Vol'nov, I. I.; Dobrolyubova, M. S.; Tsentsiper, A. B. 27  
B

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakova, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of rubidium ozonide from rubidium superoxide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1966, 1665

TOPIC TAGS: inorganic synthesis, rubidium ozonide, rubidium superoxide, rubidium compound

ABSTRACT: Rubidium ozonide containing 96.6%  $\text{RbO}_3$  and 3.4%  $\text{Rb}_2\text{O}$  was obtained by using for the first time a new reaction which was earlier successfully applied for the preparation of high-purity  $\text{C}_2\text{O}_3$  [I. I. Vol'nov and V. V. Matveyev. Izv. AN SSSR. Ser. Khim., 1963, 1136]. The reaction between rubidium superoxide  $\text{RbO}_2$  and ozonized oxygen was carried out at OC in a fluidized bed. Rubidium ozonide was extracted by liquid ammonia. The  $\text{RbO}_2$  starting material was prepared by Matveyev by spraying Rb metal in oxygen and argon in a special apparatus which was previously described. The purest rubidium ozonide which was obtained by an older method from rubidium hydroxide contained only 66.6%  $\text{RbO}_3$ . [JK]

SUB CODE: 07/ SUBM DATE: 19Feb66/ ORIG REF: 004/ ATD PRESS: 5094

Card 1/1

UDC: 542.91+542.943.5+546.35

ACCESSION NR: AP4039620

S/0076/64/038/005/1182/1187

AUTHORS: Vol'nov, I.I. (Moscow); Tsentsiper, A.B. (Moscow); Chamova, V.N. (Moscow); Laty'sheva, Ye.I. (Moscow); Kuznetsova, Z.I. (Moscow)

TITLE: Synthesis of oxygen-labeled hydrogen peroxide from dissociated heavy oxygen water in the glow discharge

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 5, 1964, 1182-1187

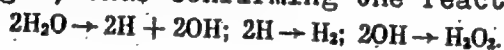
TOPIC TAGS: oxygen labeled hydrogen peroxide, hydrogen peroxide synthesis, heavy oxygen water, glow discharge, heavy oxygen water vapor, labeled peroxide synthesis parameter, oxygen isotope, deuterium labeled oxygen peroxide, oxygen isotope content

ABSTRACT: The equipment for this efficient laboratory synthesis is figured. The discharge tube was fed with a 1150-1800 volt, 0.1-0.5 amp. current. The oxygen-labeled water vapor was fed at the rate of 0.03-1.84 mol/hour, the vapor pressure was 0.43-0.53 mm Hg. The dissociated water vapor was removed from the discharge area, cooled, etc. and the yield determined by titration. This was a function of the parameter  $Up.v$ , where  $U$  is the discharge force (kva),  $v$  the rate

Card 1/3

ACCESSION NR: AP4039620

of adding the water vapor and p the pressure of the vapor entering the discharge tube. The isotope content of oxygen in the starter water and the peroxide was determined by mass spectrometry. Both the water remaining in the vaporizer and that formed upon decomposition of the synthesized  $H_2O^{18}_2$  were found to differ little from the starter water. The gases collected during the process were found to consist of hydrogen, thus confirming the reaction



The authors also synthesized  $D_2O^{18}_2$  by subjecting a mixture of  $D_2O$  and  $H_2O^{18}_2$  to the discharge. The so obtained peroxide contained 26% active oxygen, somewhat enriched from the starter material. The advantages of this method are a high degree of purity of the peroxide; the entire heavy oxygen contained in the initial water passes into the peroxide; the latter is somewhat enriched in  $O^{18}$ ; solutions of the oxygen labeled peroxide ranging from 1-50% may be obtained, depending upon the energy supply for the discharge and the rate of supply of the water vapor. Yields for 5-7% solutions were 1 g/hour on a 100%  $H_2O^{18}_2$  basis. Using the same equipment, the peroxide may be concentrated to 90% weight. Orig. art. has: 2 figures and 1 table.

Card 2/3

ACCESSION NR. AP4039620

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences, SSSR); Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova (Institute of General and Inorganic Chemistry).

SUBMITTED: 30May63

ENCL: 00

SUB CODE: IC

NO REF SOV: 006

OTHER: 001

3/3

Card

*TSENTSIPER, A.B.*

USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs. Jour : Referat Zhur - Khimiya, No 1, 1958, 148

Author : A.I. Gorbanev, S.D. Kaytmazov, A.M. Prokhorov, A.B.  
Tsentsiper.

Inst :                     

Title : Paramagnetic Resonance of Products Produced at Low Temperature of Dissociated Vapors of  $H_2O$ ,  $H_2O_2$  and  $D_2O$  in Glowing Discharge.

Orig Pub : Zh. fiz. khimii, 1957, 31, No 2, 515

Abstract : Vitreous substances obtained at a low temperature ( $90^\circ K$ ) heterogenous interaction of vapors of  $H_2O$ ,  $D_2O$ ,  $H_2O_2$  dissociated in an electric discharge, as well as at the interaction of  $H_2$  with liquid  $O_3$  and of  $H$  with  $O_2$  produce the electronic paramagnetic resonance. Regardless of the method of production and the coloration of specimens, the absorption line has the same asymmetric shape (with a "shoulder"). The line asymmetry in amorphous substances

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USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 148

indicates the anisotropy of the  $\gamma$ -factor. Consequently, the absorption may be attributed to the free radical  $\text{HO}_2$ , the presence of which has been postulated previously, or the  $\text{OH}$ , which is less probable, because the latter could hardly be preserved in a trap even at  $77^\circ\text{K}$  due to its high reaction capacity.

Card 2/2

KAYTMAZOV, S. D., PROKHOROV, A. M. and TSENTSIPER, A. B.

"Electron Paramagnetic Resonance of Radicals Obtained From  $H_2O$  and  $H_2O_2$ " p.23

Trudy Transactions of the First Conference on Radioaction Chemistry, Moscow,  
Izd-vo AN SSSR, 1958. 330pp.  
Conference -25-30 March 1957, Moscow

GORBANEV, A.I.; ~~TSENTSIPER, A.B.~~; ZHITENEVA, P.M.; DANILOVA, M.S.

Reaction of dissociated vapors of  $H_2O_2$  at a temperature of  $-196^{\circ}C$ .  
Izv. Sib. otd. AN SSSR no.5:43-52 '58. (MIRA 11:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova  
AN SSSR.  
(Hydrogen peroxide) (Electric discharges through gases)

5(2)

AUTHORS:

Zinov'yev, A. A., Tsentsiper, A. B.

SOV/78-4-4-4/44

TITLE:

VIII. Concerning the Thermal Decomposition of  
Anhydrous Perchloric Acid (VIII. O termicheskom  
razlozhenii bezvodnoy khlornoy kisloty)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4,  
pp 724-729 (USSR)

ABSTRACT:

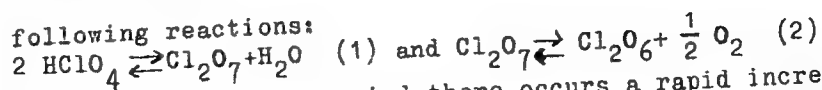
The thermal decomposition of anhydrous perchloric acid and the decomposition products produced were investigated. It was found that the decomposition is characterized by the appearance of an induction period and a self-acceleration at the beginning of the process. The kinetic curves are S-shaped. The mechanism is that of a chain reaction. The decomposition of the perchloric acid was investigated in the temperature interval of 40 - 96°. The kinetic curves for the oxygen formation and the corresponding curves of the velocity of the gas formation were the same in all experimental cases. During the induction period there is no noticeable evolution of oxygen, but a slow change in the color of the acid from colorless to dark red occurs, apparently according to the

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SOV/78-4-4-4/44

VIII. Concerning the Thermal Decomposition of  
Anhydrous Perchloric Acid

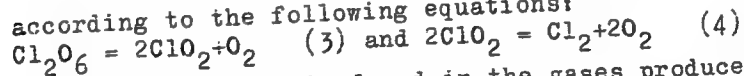
following reactions:



After the induction period there occurs a rapid increase in the reaction rate with the evolution of oxygen. The reaction rate increases with an increase in temperature.  $\text{ClO}_2$  and  $\text{Cl}_2$  are also formed during the decomposition.

The formation of chlorodioxide and  $\text{Cl}_2$  probably occurs

according to the following equations:



Elemental chlorine is found in the gases produced. The decomposition process of the perchloric acid occurs through many intermediate stages. It follows from the experimental results that the temperature changes do not influence the character of the kinetic curves, but only change the rate of reaction. The energy of activation in the decomposition of perchloric acid was found to be  $E = 22200 \text{ cal/Mol}$ . A table gives the kinetic characteristics of the thermal decomposition of perchloric acid. There are 4 figures, 1 table, and 5 references, 1 of which is Soviet.

Card 2/3

SOV/78-4-5-24/46

5(4)  
AUTHOR:

Tsentsiper, A. B.

TITLE:

On the Thermal Decomposition of Aqueous Perchloric Acid  
(O termicheskom razlozhenii vodnykh rastverov khlornoy kisloty)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 5;  
pp 1086-1091 (USSR)

ABSTRACT:

The kinetics of the decomposition of perchloric acid of various concentrations was investigated and the rules governing this process were examined. The kinetics was investigated on the basis of the determination of the oxygen volume formed. The aqueous solution of the perchloric acid used was varied within the interval of 98 - 83%  $\text{HClO}_4$ . Decomposition was investigated within the temperature interval of 95 - 65° (Fig 1). The decomposition of a 83% perchloric acid was carried out also at 145°. The results obtained show that the character of decomposition of perchloric acid is independent of the initial concentration of the acid and of temperature. The kinetic decomposition curves of the aqueous perchloric acid do not differ from those of pure perchloric acid. On the basis of the dependence of the rate of decomposition on temperature,

Card 1/2

SOV/78 4-5-24/46

On the Thermal Decomposition of Aqueous Perchloric Acid

the energy of decomposition activity was determined. The value amounts to 22,560 cal/mol. The decomposition of perchloric acid develops as a chain reaction. It is assumed that chain formation is caused by the hydroxyl group in the acid. Perchloric acid hydrates in aqueous solutions by forming the pseudoform:  $O_3Cl-OH \rightarrow OH + ClO_3$ .

There are 4 figures, 1 table, and 7 references, 1 of which is Soviet.

SUBMITTED: January 25, 1958

Card 2/2

5(2)  
 AUTHORS: Tsentiper, A. B., Danilova, M. S., Kanishcheva, A. S.,  
 Gorbanev, A. I. SOV/78-4-9-2/44  
 TITLE: New Data on the Existence of a Higher Hydrogen Peroxide  
 PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9,  
 pp 1952-1957 (USSR)  
 ABSTRACT: The glassy substance formed at  $-196^{\circ}$  in the vapors of water  
 and hydrogen peroxide dissociated by glow discharge, and by  
 reaction of hydrogen atoms with oxygen or with liquid ozone  
 has been described by many authors (Refs 1 - 11), among  
 others by N. I. Kobozev, L. I. Nekrasov and Ye. N. Yerevin  
 (Ref 11). In the present paper the X-ray analysis of this  
 substance is reported on. The substance was synthesized by  
 means of a glow discharge in an  $H_2O - H_2O_2$  atmosphere in the  
 apparatus described in reference <sup>2</sup>17, and by causing atomic  
 H to react with liquid  $O_2$ . The goniometer head of the X-ray  
 camera is given in figure 1, the Dewar vessel in figure 2.  
 Table 1 gives data obtained from radiographs of the substance  
 investigated, and table 2 the chemical analyses. The authors  
 state that the substance is formed in the amorphous state  
 regardless of the synthetic method applied. It begins to  
 crystallize slowly at  $-115^{\circ}$ , crystallization being completed

Card 1/2

SOV/78-4-9-2/44

New Data on the Existence of a Higher Hydrogen Peroxide

after 5 hours. Grinding of the substance under liquid nitrogen also induces crystallization. Only the lines of ice and hydrogen peroxide were visible in the radiograph, as well as the halo of the amorphous substance, for which the composition  $H_2O_4$  was determined. The substance evidently is a higher hydrogen peroxide. The authors express their thanks to G. A. Gol'der for his valuable advice. This investigation was carried out together with the Fizicheskii Institut Akademii nauk SSSR (Institute of Physics of the Academy of Sciences, USSR). There are 2 figures, 2 tables, and 19 references, 6 of which are Soviet.

SUBMITTED: May 5, 1958

Card 2/2

5(4)  
 AUTHORS: Gerasimov, G. N.; Pural', A. P., SOV/76-33-8-22/39  
 Tsentsiper, A. B. (Moscow)  
 TITLE: Photolysis of  $H_2O_2$  in Alkaline Media  
 PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 3, pp 1806-1807  
 (USSR)  
 ABSTRACT: In a previous paper (Ref 1), a chain mechanism of the photo-chemical decomposition of hydrogen peroxide (I) in aqueous media was suggested. In this pattern, however, active intermediate products with an ion- or ion-radical character were not taken into account. The magnitude of the aggregate quantum yield in the latter case seems to be almost completely independent of the pH of the medium. Since the data found in publications are contradictory, the investigations referred to in the title were carried out by means of an apparatus already described (Ref 1) and, in the main, at 20°C. The reaction rate was determined by gas volumetric or permanganometric measurements of the (I)-concentration. The latter varied from 0.08 to 0.105 mol/l in the various test series. The pH-measurements (in the KOH- and NaOH-solutions) were carried out with a glass electrode and the potentiometer LP-5. The results obtained in the measurements showed that within the

Card 1/2

Photolysis of  $H_2O_2$  in Alkaline Media

SOV/76-33-8..22/39

range of pH 6.0 - 11.2 the photolysis rate of (I) does not depend on the pH. It was found that no ions or ion radicals were formed. The acceleration of the thermal decomposition of (I) (at 40°), which comes about as the OH-ion concentration rises, is considered due to a weakening of the O-O peroxide bond (Ref 7) and the acceleration of the thermal radical decomposition of (I). The stabilizing effect of  $H^+$ -ions in the thermal and photochemical (I)-decomposition is explained by the formation of resistant perhydroxonium ions  $[H.H_2O_2]^+$ . There are 7 references, 3 of which are Soviet.

SUBMITTED: January 10, 1958

Card 2/2

VOL'NOV, I.I.; TSENTSIPER, A.B.; CHAMCVA, V.N.; LATYSHEVA, Ye.I.; KUZNETSOVA, Z.I.

Synthesis of oxygen-labeled hydrogen peroxide from dissociated heavy oxygen water in a glow discharge. Zhur. fiz. khim. 38  
no.5:1182-1187 My '64. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova  
AN SSSR. Submitted May 30, 1963.

L 16985-66 EWT(m)/T WW/JW/WE/RM  
ACC NR: AP6002107

SOURCE CODE: UR/0062/65/000/011/2083/2085

AUTHORS: Tsentsiper, A. B.; Kuznetsova, Z. I.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnyakov, Academy of Sciences SSSR (Institute obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Reaction of lithium peroxide with ethane<sup>114/55</sup><sub>112</sub>

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1965, 2083-2085

TOPIC TAGS: lithium compound, peroxide, ethane, oxidation kinetics, activation energy

ABSTRACT: Oxidation<sup>11</sup> of ethane (I) with lithium peroxide<sup>11</sup> (II) was studied as a representative reaction of oxidation of hydrocarbons with peroxides containing  $O_2^{2-}$  ion directly in their crystal lattice. This reaction is of interest in the studies of phenomena occurring during catalytic oxidation of hydrocarbons. Experiments were performed according to the method described by A. B. Tsentsiper and S. A. Tokareva (Zh. neorg. khimii, 6, 2474, 1961) at 250--300C. Reaction was followed by measuring pressure changes, and the products were analyzed chromato-

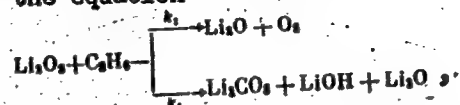
Card 1/2

UDC: 531.1+541.124+661.49

L 16985-66

ACC NR: AP6002107

graphically and by titration. It was established that they consisted of  $\text{Li}_2\text{CO}_3$  and  $\text{LiOH}$  according to the equation



where  $k_1$  and  $k_2$  are reaction rates. Simultaneously with the total oxidation of I (activation energy 27 kcal/mole) there occurs the decomposition of II (activation energy 50 kcal/mole), the former reaction being considerably more intensive than the latter. Orig. art. has: 3 tables and 3 equations.

SUB CODE: 07/ SUBM DATE: 11Mar65/ ORIG REF: 007/

OTH REF: 001

Card 2/2 *mgj*

ACC NR: AP7006258

SOURCE CODE: UR/0062/67/000/001/0195/0197

AUTHOR: Tsentsiper, A. B.; Rogozhnikova, T. I.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: On the fusion of potassium superoxide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1967, 195-197

TOPIC TAGS: potassium compound, superoxide, melting point

ABSTRACT: The effect of pressure (1, 15, 100, 400 and 750 mm Hg) on the melting point of  $KO_2$  was studied by means of a differential-thermal recording of heating and cooling curves. The fusion process was found to be preceded by the dissociation of  $KO_2$ , which begins at the temperature at which the external pressure becomes less than the equilibrium pressure. At a pressure of about 9 atm and 565°K,  $KO_2$  (containing 6.6% KOH as an impurity) melts without decomposing. It is postulated that  $KO_2$  contains a eutectic with the product of its dissociation. Since the initial substance contains 6.6% KOH, the determination of the true melting of  $KO_2$  will be possible only after the influence of this impurity on the fusion of  $KO_2$  has been established. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 22Jun66/ ORIG REF: 001/ OTH REF: 003

Card 1/1

UDC: 542.49+611.312

L 8150-66 EWP(t)/EWP(b)/EWT(m)/EPF(c) IJP(c) JD/RW/JG/RM  
ACC NR: AP5027693 SOURCE CODE: UR/0062/65/000/010/1902/1904  
AUTHOR: Tsentsiper, A. B.; Kuznetsova, Z. I. 44.5 63  
ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakova,  
Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii  
Akademii nauk SSSR) 44.5  
TITLE: Thermal decomposition of lithium peroxide 44.5  
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1965,  
1902-1904  
TOPIC TAGS: lithium compound, lithium oxide, solid solution, heat of  
decomposition, chemical reaction kinetics  
ABSTRACT: The thermal decomposition of lithium peroxide under static  
conditions was investigated in the 270-320 C range to provide data for  
the kinetics of the reaction. The decomposition to lithium oxide and  
oxygen was followed by differential manometric measurements and was  
found to proceed without autoacceleration. A  $\text{Li}_2\text{O}_2\text{-Li}_2\text{O}$  solid solution  
was formed when more than about 50% of the lithium peroxide was  
decomposed. The apparent energy of activation of the lithium peroxide  
decomposition was calculated to be 50 kcal/mole. X-ray analysis was  
conducted by V. M. Bakulin and A. N. Zimin to support the conclusion  
Card 1/2 44.5 44.5 UDC: 546.34+541.459+531.1 0246

L 8150-66

ACC NR: AP5027693

that a solid solution was formed. Orig. art. has: 1 figure, 2 tables  
and 3 equations.

SUB CODE: IC/ SUBM DATE: 27Feb65/ ORIG REF: 004/ OTH REF: 001

nw

Card 2/2

TSENTSIPER, A.B.; KUZNETSOVA, Z.I.

Thermal decomposition of lithium peroxide. Izv. AN SSSR.Ser.khim.  
no.10:1902-1904 '65. (MIRA 18:10)

1. Institut obshchey i neorganicheskoy khimii Im. N.S.Kurnakova  
AN SSSR.

TSENTSIPER, A.B.; YEREMIN, Ye.N.; KOBOZEV, N.I.

Conversion of hydrocarbons to acetylene in the electric discharge in a static system. Zhur.fiz.khim. 37 no.7:1487-1491 J1 '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet.

TSENTSIPER, A.B.; YEREMIN, Ye.N.; KOBOZEV, N.I. (Moscow)

Conversion of hydrocarbons to acetylene in the electric discharge  
in a static system. Part 2. Zhur. fiz. khim. 37 no.5:1063-1068  
My '63. (MIRA 17:1)

TSENTSIPER, A.B.; YEREMIN, Ye.N.; KOBOZEV, N.I.

Conversion of hydrocarbons to acetylene in the electric discharge in a static system. Part 3; Electrocracking of methane, ethane, and propane to acetylene in the arc. Zhur. fiz. khim. 37 no.6: 1264-1269 Je '63. (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.  
(Paraffins) (Acetylene) (Cracking process)

L 16923-63

RM/WW

EPF(c)/EWT(1)/EWT(m)/BDS/ES(w)-2

AFFTC/ASD/SSD Pr-4/Fab-4  
S/076/63/037/004/013/029

75  
74

AUTHOR: Tsentsiper, A. B., Yeregin, Ye. N., Kobozev, N. I.

TITLE: The study of the conversion of hydrocarbons into acetylene in the  
electrical discharge in a static system. I. Comparative study of  
the conversion rates of methane, ethane, propane, ethylene, and  
propylene

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 835-841

TEXT: The conversion of methane, ethane, propane, propylene, and ethylene in a discharge are investigated. The basic element of the testing unit was a reactor composed of a round-bottom flask with two brass electrodes and with internal water cooling. The distance between electrodes was set at 15 mm. The current was varied between 50-600 ma and the pressure of the hydrocarbons between 10-150 mm of mercury. There are two types of discharge which differ sharply in their conversion rates. Change from one type to the other takes place with a change in pressure and in current density. The conditions under which the transition takes place are different for methane and the other hydrocarbons. During the active (glowing) discharge the main direction of the decomposition process for the hydrocarbons, as for the methane, lies in the formation of acetylene;

Card 1/2

L 16923-63

S/076/63/037/004/013/029

The study of the conversion of hydrocarbons into ...

ethylene is produced in small amounts. The activity of the chemical action of the discharge may be characterized by the energy efficiency, which is proportional to the amount of hydrocarbon reacting per unit of energy expended. The energy efficiency of the active form of the discharge is approximately the same for all the hydrocarbons which were investigated. There are 2 tables and 2 figures. The most important English-language reference reads as follows: E. G. Linder, A. P. Davis, J. Phys. Chem., 35, 3649, 1931.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: April 24, 1962

Card 2/2